

## HAWAII ADMINISTRATIVE RULES

## TITLE 12

## DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

## SUBTITLE 8

## DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

## PART 1

GENERAL, LEGAL, AND ADMINISTRATIVE PROVISIONS  
FOR OCCUPATIONAL SAFETY AND HEALTH

## CHAPTER 50

## GENERAL PROVISIONS AND DEFINITIONS

§12-50-1	Application
§12-50-2	Definitions
§12-50-3	Use of existing equipment
§12-50-4	Sufficiency of safeguards
§12-50-5	Minimum standards
§12-50-6	Computation of time
§12-50-7	Repealed
§12-50-8	Repealed
§12-50-9	Incorporation of federal standard

Historical note: Chapter 50 of title 12 is based upon chapter 101 of the Hawaii Occupational Safety and Health Standards, Rules and Regulations. [Eff. 7/11/74; am 6/7/76; am 12/30/76; am 8/22/77; am 8/11/78; am 8/23/79; R 7/12/82]

**§12-50-1 Application.** This part contains occupational safety and health administrative rules, which apply to parts 1 through 8. Parts 2 and 8 apply to all industries in all work environments, except that audiometric testing in chapter 12-200.1 does not apply to construction work unless employees are exposed to an 8-hour time weighted average of 90 dBA and above. Part 3 applies only to construction. [Eff. 7/12/82; am 8/15/87; am 11/16/96; am 2/14/00; am 5/21/04] (Auth: HRS §396-4) (Imp: HRS §396-4)

**§12-50-2 Definitions.** As used in chapters 50 through 209:

"Administrator" means the administrator, division of occupational safety and health, department of labor and industrial relations.

"Affected employee" means an employee affected by the grant or denial of a variance, and includes any one of the employee's designated representatives.

"Appeals board" means the labor and industrial relations appeals board, department of labor and industrial relations.

"Assistant secretary" means for the purpose of title 12, subtitle 8, the director of the department of labor and industrial relations or the director's designee.

"Attorney general" means the attorney general of the State of Hawaii.

"Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or to be at a specific location at the jobsite.

"Citation" means any order of the department of labor and industrial relations to correct a violation of the law, of any standard, rule, or order promulgated pursuant to the law, or of any substantive rule published in these chapters.

"Competent person" means one who is capable of identifying existing or predicting development of hazards in the surroundings or working conditions which are unhealthy, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate the hazards.

"Compulsory process" means the institution of any action, including ex parte application for an inspection warrant or its equivalent.

"Construction" or "construction work" means work for construction, alteration, demolition, or repair including painting and decorating, erection of new electric transmission and distribution lines and equipment, and the alteration, conversion, and improvement of the existing transmission and distribution lines and equipment.

"Department" or "DLIR" means the department of labor and industrial relations, State of Hawaii.

"Designated representative" means any individual or organization to whom an employee gives written authorization to exercise that employee's rights under parts 1, 2, 3, and 8. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

"Director" means the director of the department of labor and industrial relations or the director's designee.

"Division" or "HIOSH" means the occupational safety and health division, department of labor and industrial relations, State of Hawaii.

"Employee" means every natural person who is required, directed, permitted, or suffered by any employer to engage in any employment, to go to work, or be at any time in any place of employment.

"Employee of the State" means officers and employees of the department of labor and industrial relations, and persons acting in behalf of the department in an official capacity, whether temporarily or with or without compensation.

"Employer" means the State and every state agency; each county and all public and quasi-public corporations and public agencies; every person which has any natural person in service; the legal representative of any deceased employer; or every person having direction, management, control, or custody of any employment, place of employment, or any employee.

"Employment" means the carrying on of any trade, business, occupation, or work, including all excavation, demolition, and construction work, or any process or operation in any way related thereto, in which any person is engaged to work for hire except domestic service in or about a private home.

"Establishment" means a single physical location where business is conducted or where services of industrial operations are performed; for example, a factory, mill, store, hotel, restaurant, movie theatre, farm, ranch, bank, sales office, warehouse, or central administrative office.

"First aid" means any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care; one-time treatment and a follow-up visit for the purpose of observation are considered first aid even though provided by a physician or registered professional personnel.

"Gravity of violation" means the basis for calculating the basic penalty for violations. The assessments are made on the severity of the injury or illness which could result from the alleged violation and the probability that an injury or illness could occur as a result of the alleged violation.

"Hawaii Revised Statutes" or "HRS" means laws enacted by the Hawaii State legislature.

"HIOSH" means the Occupational Safety and Health Division, Department of Labor and Industrial Relations, State of Hawaii.

"Infeasible" means that it is impossible to perform the work using all available means and methods or that it is technologically impossible to use safety equipment or safe practices.

"Inspection" means any inspection of an employer's factory, plant, establishment, construction site, or other area, workplace, or environment where work is performed by an employee of an employer; this includes any inspection conducted pursuant to a complaint filed under section 12-51-11(a) and section 12-51-11(c), any reinspection, follow-up inspection, accident investigation, or other inspection conducted under the law.

"Law" means chapter 396, HRS, the Hawaii occupational safety and health law.

"Lost time case" means a nonfatal traumatic injury that causes any loss of time from work beyond the day or shift it occurred, or a nonfatal nontraumatic illness/disease that causes disability at any time.

"Lost workdays" means number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or any part of the

normal assignment during all or any part of the workday or shift, because of the occupational injury or illness.

"Medical treatment" means treatment administered by a physician or by registered professional personnel under the standing orders of a physician but does not include first aid treatment even though provided by a physician or registered professional personnel.

"Nationally recognized testing laboratories" means those laboratories listed by the U. S. Department of Labor, Occupational Safety and Health Administration.

"Occupational safety and health standard" means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

"Order" means a command to perform a mandatory act issued by the department.

"OSHA" means, for the purpose of title 12, subtitle 8, Hawaii Occupational Safety and Health Division, Department of Labor and Industrial Relations, State of Hawaii.

"OSHA's designee" means, for the purpose of title 12, subtitle 8, the director of the department of labor and industrial relations or the director's designee.

"Party" means a person admitted to participate in a hearing conducted in accordance with subchapter 3 of chapter 12-53; an applicant for relief and any affected employee is entitled to be named parties; the department, represented by the attorney general, is a party without the necessity of being named.

"Person" means an individual, partnership, association, corporation, business trust, legal representative, an organized group of individuals, or an agency, authority, or instrumentality of the State or its political subdivisions.

"Personally identifiable employee medical information" means employee medical information accompanied by either direct identifiers (name, address, social security number, payroll number, etc.) or by information which could reasonably be used in the particular circumstances indirectly to identify specific employees, e.g., exact age, height, weight, race, sex, date of initial employment, job title, etc.

"Place of employment" means any place, and the premises appurtenant thereto, where employment is carried on.

"Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

"Recordable occupational injuries or illnesses" means any occupational injuries or illnesses which result in:

- (1) Fatalities, regardless of the time between the injury and death, or the length of the illness; or
- (2) Lost workday cases, other than fatalities, that result in lost workdays; or
- (3) Nonfatal cases without lost workdays which result in transfer to another job or termination of employment, medical treatment (other than first aid), loss of consciousness, or restriction of work or motion which includes any diagnosed occupational illnesses reported to the employer but are not classified as fatalities or lost workday cases.

"Rule" means each section in the State of Hawaii occupational safety and health rules and standards, adopted under chapter 396, HRS, and includes any "rule" and "occupational safety and health standard".

"Safe and safety" as applied to an employment or place of employment means such freedom from danger to employees as the nature of the employment reasonably permits.

"Safety and health compliance officers" means occupational safety and health officers and environmental health specialists assigned within the department to inspection and enforcement duties.

"Safety device" and "safeguard" means any practicable method of mitigating or preventing a specific danger.

"Severity assessment" means an assessment assigned to a hazard to be cited according to the serious injury or illness which could reasonably be expected to result from an employee's exposure as follows:

- (1) High severity - death from injury or illness; injuries involving

- permanent disability; or chronic, irreversible illnesses.
- (2) Medium severity - injuries or temporary reversible illnesses resulting in hospitalization or a variable but limited period of disability.
  - (3) Low severity - injuries or temporary, reversible illnesses not resulting in hospitalization and requiring only minor supportive treatment.
  - (4) Minimal severity - conditions which have a direct and immediate relationship to the safety and health of employees, the injury or illness most likely to result would probably not cause death or serious physical harm.

"Shall" means mandatory.

"Substantial" means constructed of such strength, material, design, and workmanship that the object referred to will withstand all normal wear, shock, and usage. [Eff. 7/12/82; am 8/15/87; am 3/22/91; am 1/26/96; am 7/10/97; am 10/23/97; am 7/6/98; am 3/23/01; am 1/10/03] (Auth: HRS §396-4) (Imp: HRS §396-4)

**§12-50-3 Use of existing equipment.** Nothing in these rules shall prevent the use of existing equipment during its lifetime, if it is safeguarded properly, maintained in good condition, and conforms to factors of safety. [Eff. 7/12/82; am 8/15/87] (Auth: HRS §396-4) (Imp: HRS §396-4)

**§12-50-4 Sufficiency of safeguards.** The director may require safeguards not required in these standards if a sufficient hazard exists to warrant this action. The final determination of the sufficiency of any safeguard rests with the director. [Eff 7/12/82; am 8/15/87] (Auth: HRS §396-4) (Imp: HRS §396-4)

**§12-50-5 Minimum standards.** These rules establish minimum standards applying to all employment and places of employment in Hawaii as defined by chapter 396, HRS. [Eff. 7/12/82] (Auth: HRS §396-4) (Imp: HRS §396-4)

**§12-50-6 Computation of time.** (a) The time in which any act required by these rules is computed by excluding the first day and including the last, except for the computation of the number of days a violation continued unabated. If the last day falls on a Saturday, Sunday, or legal holiday, it is also excluded.

(b) The number of days a violation continues to be unabated shall be computed from the day following the abatement date specified in the citation or the final order. It shall include all calendar days between that date and the date of reinspection, excluding the date of reinspection. [Eff. 7/12/82; am 8/15/87] (Auth: HRS §396-4) (Imp: HRS §396-4)

**§12-50-9 Incorporation by reference.** Incorporation of federal standard. Title 29, Code of Federal Regulations, section 1910.6, entitled "Incorporation by reference" published by the Office of the Federal Register, National Archives and Records Administration, on June 27, 1974; and the amendments published on February 10, 1984; March 7, 1996; March 23, 1999; September 13, 2005; February 14, 2007; and December 14, 2007, are made a part of this section. [Eff 2/14/00; am 12/29/00; am 3/31/06; am 08/26/07; am 5/02/2008] (Auth: HRS §396-4) (Imp: HRS §396-4)

#### **§1910.6 Incorporation by reference.**

- (a)
  - (1) The standards of agencies of the U.S. Government, and organizations which are not agencies of the U.S. Government which are incorporated by reference in this part, have the same force and effect as other standards in this part. Only the mandatory provisions (i.e., provisions containing the word "shall" or other mandatory language) of standards incorporated by reference are adopted as standards under the Occupational Safety and Health Act.
  - (2) Any changes in the standards incorporated by reference in this part and an official historic file of such changes are available for inspection at the national office of the Occupational Safety and Health Administration, U.S. Department of Labor, Washington, DC 20210.
  - (3) The materials listed in paragraphs (b) through (w) of this section are incorporated by reference in the corresponding sections noted as they exist on the date of the approval, and a notice of any change in these materials will be published in the FEDERAL REGISTER. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.
  - (4) Copies of the following standards that are issued by the respective private standards organizations may be obtained from the issuing organizations. The materials are available for purchase at the corresponding addresses of the private standards organizations noted below. In addition, all are available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington DC, and through the OSHA Docket Office, room N2625, U.S. Department of Labor, 200 Constitution Ave., Washington, DC 20210, or any of its regional offices.
- (b) The following material is available for purchase from the American Conference of Governmental Industrial Hygienists (ACGIH), 1014 Broadway, Cincinnati OH 45202:
  - (1) "Industrial Ventilation: A Manual of Recommended Practice" (22<sup>nd</sup> ed., 1995), incorporation by reference (IBR) approved for §1910.124(b)(4)(iii).
  - (2) Threshold Limit Values and Biological Exposure Indices for 1986-87 (1986), IBR approved for §1910.120, PEL definition.
- (c) The following material is available for purchase from the American Society of Agricultural Engineers (ASAE), 2950 Niles Road, Post Office Box 229, St. Joseph, MI 49085:
  - (1) ASAE Emblem for Identifying Slow Moving Vehicles, ASAE S276.2 (1968), IBR approved for §1910.145(d)(10).
  - (2) [Reserved]
- (d) The following material is available for purchase from the Agriculture Ammonia Institute-Rubber

Manufacturers (AAI-RMA) Association, 1400 K St. NW, Washington DC 20005:

- (1) AAI-RMA Specifications for Anhydrous Ammonia Hose, IBR approved for §1910.111(b)(8)(i).
  - (2) [Reserved]
- (e)** The following material is available for purchase from the American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036:
- (1) [Reserved]
  - (2) [Reserved]
  - (3) ANSI A11.1-65 (R 70) Practice for Industrial Lighting, IBR approved for §§1910.219(c)(5)(iii); 1910.261(a)(3)(i), (c)(10), and (k)(21); and 1910.265(c)(2).
  - (4) ANSI A11.1-65 Practice for Industrial Lighting, IBR approved for §§1910.262(c)(6) and 1910.265(d)(2)(i)(a).
  - (5) [Reserved]
  - (6) ANSI A13.1-56 Scheme for the Identification of Piping Systems, IBR approved for §§1910.253(d)(4)(ii); 1910.261(a)(3)(iii); 1910.262(c)(7).
  - (7) ANSI A14.1-68 Safety Code for Portable Wood Ladders, Supplemented by ANSI A14.1a-77, IBR approved for §1910.261(a)(3)(iv) and (c)(3)(i).
  - (8) ANSI A14.2-56 Safety Code for Portable Metal Ladders, Supplemented by ANSI A14.2a-77, IBR approved for §1910.261(a)(3)(v) and (c)(3)(i).
  - (9) ANSI A14.3-56 Safety Code for Fixed Ladders, IBR approved for §§1910.68(b)(4) and (12); 1910.179(c)(2); and 1910.261(a)(3)(vi) and (c)(3)(i).
  - (10) ANSI A17.1-65 Safety Code for Elevators, Dumbwaiters and Moving Walks, Including Supplements, A17.1a (1967); A17.1b (1968); A17.1c (1969); A17.1d (1970), IBR approved for §1910.261(a)(3)(vii), (g)(11)(i), and (l)(4).
  - (11) ANSI A17.2-60 Practice for the Inspection of Elevators, Including Supplements, A17.2a (1965), A17.2b (1967), IBR approved for §1910.261(a)(3)(viii).
  - (12) ANSI A90.1-69 Safety Standard for Manlifts, IBR approved for §1910.68(b)(3).
  - (13) ANSI A92.2-69 Standard for Vehicle Mounted Elevating and Rotating Work Platforms, IBR approved for §1910.67(b)(1), (2), (c)(3), and (4) and 1910.268(s)(1)(v).
  - (14) ANSI A120.1-70 Safety Code for Powered Platforms for Exterior Building Maintenance, IBR approved for §1910.66 App. D (b) through (d).
  - (15) ANSI B7.1-70 Safety Code for the Use, Care and Protection of Abrasive Wheels, IBR approved for §§1910.215(b)(12) and 1910.218(j).
  - (16) ANSI B15.1-53 (R 58) Safety Code for Mechanical Power Transmission Apparatus, IBR approved for §§1910.68(b)(4) and 1910.261(a)(3)(ix), (b)(1), (e)(3), (e)(9), (f)(4), (j)(5)(iv), (k)(12), and (l)(3).
  - (17) ANSI B20.1-57 Safety Code for Conveyors, Cableways, and Related Equipment, IBR approved for §§1910.218(j)(3); 1910.261 (a)(3)(x), (b)(1), (c)(15)(iv), (f)(4), and (j)(2); 1910.265(c)(18)(i).
  - (18) ANSI B30.2-43 (R 52) Safety Code for Cranes, Derricks, and Hoists, IBR approved for §1910.261(a)(3)(xi), (c)(2)(vi), and (c)(8)(i) and (iv).
  - (19) ANSI B30.2.0-67 Safety Code for Overhead and Gantry Cranes, IBR approved for §§1910.179(b)(2); 1910.261(a)(3)(xii), (c)(2)(v), and (c)(8)(i) and (iv).
  - (20) ANSI B30.5-68 Safety Code for Crawler, Locomotive, and Truck Cranes, IBR approved for §§1910.180(b)(2) and 1910.261(a)(3)(xiii).
  - (21) ANSI B30.6-69 Safety Code for Derricks, IBR approved for §§1910.181(b)(2) and 1910.268(j)(4)(iv)(E) and (H).
  - (22) ANSI B31.1-55 Code for Pressure Piping, IBR approved for §1910.261(g)(18)(iii).
  - (23) ANSI B31.1-67, IBR approved for §1910.253(d)(1)(i)(A).
  - (24) ANSI B31.1a-63 Addenda to ANSI B31.1 (1955), IBR approved for §1910.261(g)(18)(iii).
  - (25) ANSI B31.1-67 and Addenda B31.1 (1969) Code for Pressure Piping, IBR approved for §§1910.103(b)(1)(iii)(b); 1910.104(b)(5)(ii); 1910.218(d)(4) and (e)(1)(iv); and 1910.261(a)(3)(xiv) and (g)(18)(iii).
  - (26) ANSI B31.2-68 Fuel Gas Piping, IBR approved for §1910.261(g)(18)(iii).
  - (27) ANSI B31.3-66 Petroleum Refinery Piping, IBR approved for §1910.103(b)(3)(v)(b).
  - (28) ANSI B31.5-66 Addenda B31.5a (1968) Refrigeration Piping, IB approved for §§1910.103(b)(3)(v)(b) and 1910.111(b)(7)(iii).
  - (29) ANSI B56.1-69 Safety Standard for Powered Industrial Trucks, IBR approved for §§1910.178(a)(2) and (3) and 1910.261(a)(3)(xv), (b)(6), (m)(2), and (m)(5)(iii).
  - (30) ANSI B57.1-65 Compressed Gas Cylinder Valve Outlet and Inlet Connections, IBR

- approved for §1910.253(b)(1)(iii).
- (31) [reserved]
  - (32) ANSI B175.1-1991, Safety Requirements for Gasoline-Powered Chain Saws 1910.266(e)(2)(i).
  - (33) [reserved]
  - (34) ANSI C33.2-56 Safety Standard for Transformer-Type Arc Welding Machines, IBR approved for §1910.254(b)(1).
  - (35) [reserved]
  - (36) ANSI H23.1-70 Seamless Copper Water Tube Specification, IBR approved for §1910.110(b)(8)(ii) and (13)(ii)(b)(1).
  - (37) ANSI H38.7-69 Specification for Aluminum Alloy Seamless Pipe and Seamless Extruded Tube, IBR approved for §1910.110(b)(8)(i).
  - (38) ANSI J6.4-71 Standard Specification for Rubber Insulating Blankets, IBR approved for §1910.268(f)(1) and (n)(11)(v).
  - (39) ANSI J6.6-71 Standard Specification for Rubber Insulating Gloves, IBR approved for §1910.268(f)(1) and (n)(11)(iv).
  - (40) ANSI K13.1-67 Identification of Gas Mask Canisters, IBR approved for §1910.261(a)(3)(xvi) and (h)(2)(iii).
  - (41) ANSI K61.1-60 Safety Requirements for the Storage and Handling of Anhydrous Ammonia, IBR approved for §1910.111(b)(11)(i).
  - (42) ANSI K61.1-66 Safety Requirements for the Storage and Handling of Anhydrous Ammonia, IBR approved for §1910.111(b)(11)(i).
  - (43) ANSI O1.1-54 (R 61) Safety Code for Woodworking Machinery, IBR approved for §1910.261(a)(3)(xvii), (e)(7), and (i)(2).
  - (44) ANSI S1.4-71 (R 76) Specification for Sound Level Meters, IBR approved for §1910.95 Appendixes D and I.
  - (45) ANSI S1.11-71 (R 76) Specification for Octave, Half-Octave and Third-Octave Band Filter Sets, IBR approved for §1910.95 Appendix D.
  - (46) ANSI S3.6-69 Specifications for Audiometers, IBR approved for §1910.95(h)(2) and (5)(ii) and Appendix D.
  - (47) ANSI Z4.1-68 Requirements for Sanitation in Places of Employment, IBR approved for §1910.261(a)(3)(xviii) and (g)(15)(vi).
  - (48) [reserved]
  - (49) ANSI Z9.1-51 Safety Code for Ventilation and Operation of Open Surface Tanks, IBR approved for 1910.261(a)(3)(xix), (g)(18)(v), and (h)(2)(i)
  - (50) ANSI Z9.1-71 Practices for Ventilation and Operation of Open-Surface Tanks, IBR approved for §1910.124(b)(4)(iv).
  - (51) ANSI Z9.2-60 Fundamentals Governing the Design and Operation of Local Exhaust Systems, IBR approved for §§1910.94(a)(4)(i) introductory text, (a)(6) introductory text, (b)(3)(ix), (b)(4)(i) and (ii), (c)(3)(i) introductory text, (c)(5)(iii)(b), (c)(7)(iv)(a); 1910.261(a)(3)(xx), (g)(1)(i) and (iii), and (h)(2)(ii).
  - (52) ANSI Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems, IBR approved for §1910.124(b)(4)(i).
  - (53) ANSI Z12.12-68 Standard for the Prevention of Sulfur Fires and Explosions, IBR approved for §1910.261(a)(3)(xxi), (d)(1)(i), (f)(2)(iv), and (g)(1)(i).
  - (54) ANSI Z12.20-62 (R 69) Code for the Prevention of Dust Explosions in Woodworking and Wood Flour Manufacturing Plants, IBR approved for §1910.265(c)(20)(i).
  - (55) ANSI Z21.30-64 Requirements for Gas Appliances and Gas Piping Installations, IBR approved for §1910.265(c)(15).
  - (56) ANSI Z24.22-57 Method of Measurement of Real-Ear Attenuation of Ear Protectors at Threshold, IBR approved for §1910.261(a)(3)(xxii).
  - (57) ANSI Z33.1-61 Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, IBR approved for §§1910.94(a)(4)(i); 1910.261(a)(3)(xxiii) and (f)(5); and 1910.265(c)(20)(i).
  - (58) ANSI Z33.1-66 Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, IBR approved for §1910.94(a)(2)(ii).
  - (59) ANSI Z35.1-68 Specifications for Accident Prevention Signs, IBR approved for §1910.261(a)(3)(xxiv) and (c)(16).
  - (60) ANSI Z41.1-67 Men's Safety Toe Footwear, IBR approved for §§1910.94(a)(5)(v);

- 1910.136(b)(2) and 1910.261(i)(4).
- (61) ANSI Z41-91, Personal Protection-Protective Footwear, IBR approved for §1910.136(b)(1).
- (62) [Reserved]
- (63) [Reserved]
- (64) ANSI Z49.1-67 Safety in Welding and Cutting, IBR approved for §1910.252(c)(1)(iv)(A) and (B).
- (65) ANSI Z53.1-67 Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, IBR approved for §§1910.97(a)(3)(ii); 1910.145(d)(2), (4), and (6).
- (66) ANSI Z54.1-63 Safety Standard for Non-Medical X-Ray and Sealed Gamma Ray Sources, IBR approved for §1910.252(d)(1)(vii) and (2)(ii).
- (67) ANSI Z87.1-68 Practice of Occupational and Educational Eye and Face Protection, IBR approved for §§1910.133(b)(2); 1910.252(b)(2)(ii)(I); and 1910.261(a)(3)(xxv), (d)(1)(ii), (f)(5), (g)(10), (g)(15)(v), (g)(18)(ii), and (i)(4).
- (68) ANSI Z87.1-89, Practice for Occupational and Educational Eye and Face Protection, IBR approved for §1910.133(b)(1).
- (69) ANSI Z88.2-69 Practices for Respiratory Protection, IBR approved for §§1910.94(c)(6)(iii)(a); 1910.134(c); and 1910.261(a)(3)(xxvi), (b)(2), (f)(5), (g)(15)(v), (h)(2)(iii) and (iv), and (i)(4).
- (70) ANSI Z89.1-69 Safety Requirements for Industrial Head Protection, IBR approved for §§1910.135(b)(2); and 1910.261(a)(3)(xxvii), (b)(2), (g)(15)(v), and (i)(4).
- (71) ANSI Z89.1-86, Protective Headwear for Industrial Workers Requirements, IBR approved for §1910.135(b)(1).
- (72) ANSI Z89.2-71 Safety Requirements for Industrial Protective Helmets for Electrical Workers, Class B, IBR approved for §1910.268(i)(1).
- (f) The following material is available for purchase from the American Petroleum Institute (API), 1220 L Street NW, Washington DC 20005:
  - (1) [reserved]
  - (2) API 12B (May 1958) Specification for Bolted Production Tanks, 11th Ed., With Supplement No. 1, Mar. 1962, IBR approved for §1910.106(b)(1)(i)(a)(3).
  - (3) API 12D (Aug. 1957) Specification for Large Welded Production Tanks, 7th Ed., IBR approved for §1910.106(b)(1)(i)(a)(3).
  - (4) API 12F (Mar. 1961) Specification for Small Welded Production Tanks, 5th Ed., IBR approved for §1910.106(b)(1)(i)(a)(3).
  - (5) API 620, Fourth Ed. (1970) Including Appendix R, Recommended Rules for Design and Construction of Large Welded Low Pressure Storage Tanks, IBR approved for §§1910.103(c)(1)(i)(a); 1910.106(b)(1)(iv)(b)(1); and 1910.111(d)(1)(ii) and (iii).
  - (6) API 650 (1966) Welded Steel Tanks for Oil Storage, 3rd Ed., IBR approved for §1910.106(b)(1)(iii)(a)(2).
  - (7) API 1104 (1968) Standard for Welding Pipelines and Related Facilities, IBR approved for §1910.252(d)(1)(v).
  - (8) API 2000 (1968) Venting Atmospheric and Low Pressure Storage Tanks, IBR approved for §1910.106(b)(2)(iv)(b)(1).
  - (9) API 2201 (1963) Welding or Hot Tapping on Equipment Containing Flammables, IBR approved for §1910.252(d)(1)(vi).
- (g) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), United Engineering Center, 345 East 47th Street, New York, NY 10017:
  - (1) ASME Boiler and Pressure Vessel Code, Sec. VIII, 1949, 1950, 1952, 1956, 1959, and 1962 Ed., IBR approved for §§1910.110(b)(10)(iii) (Table H-26), (d)(2) (Table H-31); (e)(3)(i) (Table H-32), (h)(2) (Table H-34); and 1910.111(b)(2)(vi);
  - (2) ASME Code for Pressure Vessels, 1968 Ed., IBR approved for §§1910.106(i)(3)(i); 1910.110(g)(2)(iii)(b)(2); and 1910.217(b)(12);
  - (3) ASME Boiler and Pressure Vessel Code, Sec. VIII, 1968, IBR approved for §§1910.103; 1910.104(b)(4)(ii); 1910.106(b)(1)(iv)(b)(2) and (i)(3)(ii); 1910.107; 1910.110(b)(11)(i)(b) and (iii)(a)(1); 1910.111(b)(2)(i), (ii), and (iv); and 1910.169(a)(2)(i) and (ii);
  - (4) ASME Boiler and Pressure Vessel Code, Sec. VIII, Paragraph UG-84, 1968, IBR approved for §1910.104(b)(4)(ii) and (b)(5)(iii);
  - (5) ASME Boiler and Pressure Vessel Code, Sec. VIII, Unfired Pressure Vessels, Including Addenda (1969), IBR approved for §§1910.261; 1910.262; 1910.263(i)(24)(ii);
  - (6) Code for Unfired Pressure Vessels for Petroleum Liquids and Gases of the API and the



- ASME, 1951 Ed., IBR approved for §1910.110(b)(3)(iii); and
- (7) ASME B56.6-1992 (with addenda), Safety Standard for Rough Terrain Forklift Trucks, IBR approved for §1910.266(f)(4).
- (h)** The following material is available for purchase from the American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103:
- (1) ASTM A 47-68 Malleable Iron Castings, IBR approved for §1910.111(b)(7)(vi).
  - (2) ASTM A 53-69 Welded and Seamless Steel Pipe, IBR approved for §§1910.110(b)(8)(i)(a) and (b) and 1910.111(b)(7)(iv).
  - (3) ASTM A 126-66 Gray Iron Casting for Valves, Flanges and Pipe Fitting, IBR approved for §1910.111(b)(7)(vi).
  - (4) ASTM A 391-65 (ANSI G61.1-1968) Alloy Steel Chain, IBR approved for §1910.184(e)(4).
  - (5) ASTM A 395-68 Ductile Iron for Use at Elevated Temperatures, IBR approved for §1910.111(b)(7)(vi).
  - (6) ASTM B 88-69 Seamless Copper Water Tube, IBR approved for §1910.110(b)(8)(i)(a) and (13)(ii)(b)(1).
  - (7) ASTM B 88-66A Seamless Copper Water Tube, IBR approved for §1910.252(d)(1)(i)(A)(2).
  - (8) ASTM B 117-64 Salt Spray (Fog) Test, IBR approved for §1910.268(g)(2)(i)(A).
  - (9) ASTM B 210-68 Aluminum-Alloy Drawn Seamless Tubes, IBR approved for §1910.110(b)(8)(ii).
  - (10) ASTM B 241-69, IBR approved for §1910.110(b)(8)(i) introductory text.
  - (11) ASTM D 5-65 Test for Penetration by Bituminous Materials, IBR approved for §1910.106(a)(17).
  - (12) ASTM D 56-70 Test for Flash Point by Tag Closed Tester, IBR approved for §1910.106(a)(14)(i).
  - (13) ASTM D 86-62 Test for Distillation of Petroleum Products, IBR approved for §§1910.106(a)(5) and 1910.119(b) "Boiling point."
  - (14) ASTM D 88-56 Test for Saybolt Viscosity, IBR approved for §1910.106(a)(37).
  - (15) ASTM D 93-71 Test for Flash Point by Pensky Martens, IBR approved for §1910.106(a)(14)(ii).
  - (16) ASTM D 323-68, IBR approved for §1910.106(a)(30).
  - (17) ASTM D 445-65 Test for Viscosity of Transparent and Opaque Liquids, IBR approved for §1910.106(a)(37).
  - (18) ASTM D 1692-68 Test for Flammability of Plastic Sheeting and Cellular Plastics, IBR approved for §1910.103(c)(1)(v)(d).
  - (19) ASTM D 2161-66 Conversion Tables For SUS, IBR approved for §1910.106(a)(37).
- (i)** The following material is available for purchase from the American Welding Society (AWS), 550 NW, LeJeune Road, P.O. Box 351040, Miami FL 33135:
- (1) [Reserved]
  - (2) [Reserved]
  - (3) AWS B3.0-41 Standard Qualification Procedure, IBR approved for §1910.67(c)(5)(i).
  - (4) AWS D1.0-1966 Code for Welding in Building Construction, IBR approved for §1910.27(b)(6).
  - (5) AWS D2.0-69 Specifications for Welding Highway and Railway Bridges, IBR approved for §1910.67(c)(5)(iv).
  - (6) AWS D8.4-61 Recommended Practices for Automotive Welding Design, IBR approved for §1910.67(c)(5)(ii).
  - (7) AWS D10.9-69 Standard Qualification of Welding Procedures and Welders for Piping and Tubing, IBR approved for §1910.67(c)(5)(iii).
- (j)** The following material is available for purchase from the Department of Commerce:
- (1) Commercial Standard, CS 202-56 (1961) "Industrial Lifts and Hinged Loading Ramps," IBR approved for §1910.30(a)(3).
  - (2) Publication "Model Performance Criteria for Structural Fire Fighters' Helmets," IBR approved for §1910.156(e)(5)(i).
- (k)** The following material is available for purchase from the Compressed Gas Association (CGA), 1235 Jefferson Davis Highway, Arlington, VA 22202:
- (1) CGA C-6 (1968) Standards for Visual Inspection of Compressed Gas Cylinders, IBR approved for §1910.101(a).

- (2) CGA C-8 (1962) Standard for Requalification of ICC-3HT Cylinders, IBR approved for §1910.101(a).
  - (3) CGA G-1 (1966) Acetylene, IBR approved for §1910.102(a).
  - (4) CGA G-1.3 (1959) Acetylene Transmission for Chemical Synthesis, IBR approved for §1910.102(b).
  - (5) CGA G-1.4 (1966) Standard for Acetylene Cylinder Charging Plants, IBR approved for §1910.102(b).
  - (6) CGA G-7.1 (1966) Commodity Specification, IBR approved for §1910.134(d)(1).
  - (7) CGA G-8.1 (1964) Standard for the Installation of Nitrous Oxide Systems at Consumer Sites, IBR approved for §1910.105.
  - (8) CGA P-1 (1965) Safe Handling of Compressed Gases, IBR approved for §1910.101(b).
  - (9) CGA P-3 (1963) Specifications, Properties, and Recommendations for Packaging, Transportation, Storage and Use of Ammonium Nitrate, IBR approved for §1910.109(i)(1)(ii)(b).
  - (10) CGA S-1.1 (1963) and 1965 Addenda. Safety Release Device Standards - Cylinders for Compressed Gases, IBR approved for §§1910.101(c); 1910.103(c)(1)(iv)(a)(2).
  - (11) CGA S-1.2 (1963) Safety Release Device Standards, Cargo and Portable Tanks for Compressed Gases, IBR approved for §§1910.101(c); 1910.103(c)(1)(iv)(a)(2).
  - (12) CGA S-1.3 (1959) Safety Release Device Standards-Compressed Gas Storage Containers, IBR approved for §§1910.103(c)(1)(iv)(a)(2); 1910.104(b)(6)(iii); and 1910.111(d)(4)(ii)(b).
  - (13) CGA 1957 Standard Hose Connection Standard, IBR approved for §1910.253(e)(4)(v) and (5)(iii).
  - (14) CGA and RMA (Rubber Manufacturer's Association) Specification for Rubber Welding Hose (1958), IBR approved for §1910.253(e)(5)(i).
  - (15) CGA 1958 Regulator Connection Standard, IBR approved for §1910.253(e)(4)(iv) and (6).
- (l)** The following material is available for purchase from the Crane Manufacturer's Association of America, Inc. (CMAA), 1 Thomas Circle NW, Washington DC 20005:
- (1) CMAA Specification 1B61, Specifications for Electric Overhead Traveling Cranes, IBR approved for §1910.179(b)(6)(i).
  - (2) [Reserved]
- (m)** The following material is available for purchase from the General Services Administration:
- (1) GSA Pub. GG-B-0067b, Air Compressed for Breathing Purposes, or Interim Federal Specifications, Apr. 1965, IBR approved for §1910.134(d)(4).
  - (2) [Reserved]
- (n)** The following material is available for purchase from the Department of Health and Human Services:
- (1) Publication No. 76-120 (1975), List of Personal Hearing Protectors and Attenuation Data, IBR approved for §1910.95 App. B.
  - (2) [Reserved]
- (o)** The following material is available for purchase from the Institute of Makers of Explosives (IME), 420 Lexington Avenue, New York, NY 10017:
- (1) IME Pamphlet No. 17, 1960, Safety in the Handling and Use of Explosives, IBR approved for §§1910.261(a)(4)(iii) and (c)(14)(ii).
  - (2) [Reserved]
- (p)** The following material is available for purchase from the National Electrical Manufacturer's Association (NEMA):
- (1) NEMA EW-1 (1962) Requirements for Electric Arc Welding Apparatus, IBR approved for §1910.254(b)(1).
  - (2) [Reserved]
- (q)** The following material is available for purchase from the National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269:
- (1) NFPA 30 (1969) Flammable and Combustible Liquids Code, IBR approved for §1910.178(f)(1).
  - (2) NFPA 32-1970 Standard for Dry Cleaning Plants, IBR approved for §1910.106(j)(6)(i).
  - (3) NFPA 33-1969 Standard for Spray Finishing Using Flammable and Combustible Material, IBR approved for §1910.94(c)(2).
  - (4) NFPA 34-1966 Standard for Dip Tanks Containing Flammable or Combustible Liquids, IBR approved for §1910.124(b)(4)(iv).

- (5) NFPA 34-1995 Standard for Dip Tanks Containing Flammable or Combustible Liquids, IBR approved for §1910.124(b)(4)(ii).
- (6) NFPA 35-1970 Standard for the Manufacture of Organic Coatings, IBR approved for §1910.106(j)(6)(ii).
- (7) NFPA 36-1967 Standard for Solvent Extraction Plants, IBR approved for §1910.106(j)(6)(iii).
- (8) NFPA 37-1970 Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, IBR approved for §§1910.106(j)(6)(iv) and 1910.110(b)(20)(iv)(c) and (e)(11).
- (9) NFPA 51B-1962 Standard for Fire Protection in Use of Cutting and Welding Processes, IBR approved for §1910.252(a)(1) introductory text.
- (10) NFPA 54-1969 Standard for the Installation of Gas Appliances and Gas Piping, IBR approved for §1910.110(b)(20)(iv)(a).
- (11) NFPA 54A-1969 Standard for the Installation of Gas Piping and Gas Equipment on Industrial Premises and Certain Other Premises, IBR approved for §1910.110(b)(20)(iv)(b).
- (12) NFPA 58-1969 Standard for the Storage and Handling of Liquefied Petroleum Gases (ANSI Z106.1-1970), IBR approved for §§1910.110(b)(3)(iv) and (i)(3)(i) and (ii); and 1910.178(f)(2).
- (13) NFPA 59-1968 Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants, IBR approved for §§1910.110(b)(3)(iv) and (i)(2)(iv).
- (14) NFPA 62-1967 Standard for the Prevention of Dust Explosions in the Production, Packaging, and Handling of Pulverized Sugar and Cocoa, IBR approved for §1910.263(k)(2)(i).
- (15) NFPA 68-1954 Guide for Explosion Venting, IBR approved for §1910.94(a)(2)(iii).
- (16) [reserved]
- (17) NFPA 78-1968 Lightning Protection Code, IBR approved for §1910.109(i)(6)(ii).
- (18) NFPA 80-1968 Standard for Fire Doors and Windows, IBR approved for §1910.106(d)(4)(i).
- (19) NFPA 80-1970 Standard for the Installation of Fire Doors and Windows, IBR approved for §1910.253(f)(6)(i)(I).
- (20) NFPA 86A-1969 Standard for Oven and Furnaces Design, Location and Equipment, IBR approved for §§1910.107(j)(1) and (I)(3) and 1910.108(b)(2) and (d)(2).
- (21) NFPA 91-1961 Standard for the Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying (ANSI Z33.1-61), IBR approved for §1910.107(d)(1).
- (22) NFPA 91-1969 Standards for Blower and Exhaust Systems, IBR approved for §1910.108(b)(1).
- (23) NFPA 96-1970 Standard for the Installation of Equipment for the Removal of Smoke and Grease Laden Vapors from Commercial Cooking Equipment, IBR approved for §1910.110(b)(20)(iv)(d).
- (24) NFPA 101-1970 Code for Life Safety From Fire in Buildings and Structures, IBR approved for §1910.261(a)(4)(ii).
- (25) NFPA 203M-1970 Manual on Roof Coverings, IBR approved for §1910.109(i)(1)(iii)(c).
- (26) NFPA 251-1969 Standard Methods of Fire Tests of Building Construction and Materials, IBR approved for §§1910.106(d)(3)(ii) introductory text and (d)(4)(i).
- (27) NFPA 302-1968 Fire Protection Standard for Motor-Craft (Pleasure and Commercial), IBR approved for §1910.265(d)(2)(iv) introductory text.
- (28) NFPA 385-1966 Recommended Regulatory Standard for Tank Vehicles for Flammable and Combustible Liquids, IBR approved for §1910.106(g)(1)(i)(e)(1).
- (29) NFPA 496-1967 Standard for Purged Enclosures for Electrical Equipment in Hazardous Locations, IBR approved for §1910.103(c)(1)(ix)(e)(1).
- (30) NFPA 505-1969 Standard for Type Designations, Areas of Use, Maintenance, and Operation of Powered Industrial Trucks, IBR approved for §1910.110(e)(2)(iv).
- (31) NFPA 566-1965 Standard for the Installation of Bulk Oxygen Systems at Consumer Sites, IBR approved for §§1910.253(b)(4)(iv) and (c)(2)(v).
- (32) NFPA 656-1959 Code for the Prevention of Dust Ignition in Spice Grinding Plants, IBR approved for §1910.263(k)(2)(i).
- (33) NFPA 1971-1975 Protective Clothing for Structural Fire Fighting, IBR approved for

§1910.156(e)(3)(ii) introductory text.

- (r) The following material is available for purchase from the National Food Plant Institute, 1700 K St. NW., Washington, DC 20006:
  - (1) Definition and Test Procedures for Ammonium Nitrate Fertilizer (Nov. 1964), IBR approved for §1910.109 Table H-22, fn. 3.
  - (2) [Reserved]
- (s) The following material is available for purchase from the National Institute for Occupational Safety and Health (NIOSH):
  - (1) Registry of Toxic Effects of Chemical Substances, 1978, IBR approved for §1910.20(c)(13)(i) and Appendix B.
  - (2) Development of Criteria for Fire Fighters Gloves; Vol. II, Part II; Test Methods, 1976, IBR approved for §1910.156(e)(4)(i) introductory text.
  - (3) NIOSH Recommendations for Occupational Safety and Health Standards (Sept. 1987), IBR approved for §1910.120 PEL definition.
- (t) The following material is available for purchase from the Public Health Service:
  - (1) U.S. Pharmacopeia, IBR approved for §1910.134(d)(1).
  - (2) Publication No. 934 (1962), Food Service Sanitation Ordinance and Code, Part V of the Food Service Sanitation Manual, IBR approved for §1910.142(i)(1).
- (u) The following material is available for purchase from the Society of Automotive Engineers (SAE), 485 Lexington Avenue, New York, NY 10017:
  - (1) SAE J185, June 1988, Recommended Practice for Access Systems for Off-Road Machines, IBR approved for §1910.266(f)(5)(i).
  - (2) SAE J231, January 1981, Minimum Performance Criteria for Falling Object Protective Structure (FOPS), IBR approved for §1910.266(f)(3)(ii).
  - (3) SAE J386, June 1985, Operator Restraint Systems for Off-Road Work Machines, IBR approved for §1910.266(d)(3)(iv).
  - (4) SAE J397, April 1988, Deflection Limiting Volume-ROPS/FOPS Laboratory Evaluation, IBR approved for §1910.266(f)(3)(iv).
  - (5) SAE 765 (1961) SAE Recommended Practice: Crane Loading Stability Test Code, IBR approved for §1910.180(c)(1)(iii) and (e)(2)(iii)(a).
  - (6) SAE J1040, April 1988, Performance Criteria for Rollover Protective Structures (ROPS) for Construction, Earthmoving, Forestry and Mining Machines, IBR approved for §1910.266(f)(3)(ii).
- (v) The following material is available for purchase from the Fertilizer Institute, 1015 18th Street NW, Washington, DC 20036:
  - (1) Standard M-1 (1953, 1955, 1957, 1960, 1961, 1963, 1965, 1966, 1967, 1968), Superseded by ANSI K61.1-1972, IBR approved for §1910.111(b)(1)(i) and (iii).
  - (2) [Reserved]
- (w) The following material is available for purchase from Underwriters Laboratories (UL), 207 East Ohio Street, Chicago, IL 60611:
  - (1) UL 58-61 Steel Underground Tanks for Flammable and Combustible Liquids, 5th Ed., IBR approved for §1910.106(b)(1)(iii)(a)(1).
  - (2) UL 80-63 Steel Inside Tanks for Oil-Burner Fuel, IBR approved for §1910.106(b)(1)(iii)(a)(1).
  - (3) UL 142-68 Steel Above Ground Tanks for Flammable and Combustible Liquids, IBR approved for §1910.106(b)(1)(iii)(a)(1).